

Fig. 1

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graph TD; 200[Remove sample from beam path.] --> 202[Step RAP over a discrete set of angles from 0 to 360 degrees.]; 202 --> 204[Acquire raw scan, S_B(λ, Θ), at each position, Θ, of the RAP (back reflectance).]; 204 --> 206[Place non-polarizing reference sample on sample and adjust stage height to focus using the pattern recognition system.]; 206 --> 208[Step RAP over a discrete set of angles from 0 to 360 degrees.]; 208 --> 210[Acquire raw scan at each position, Θ, of the RAP from the reference sample, S_o(λ, Θ).];
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200 Remove sample from beam path.

202 Step RAP over a discrete set of angles from 0 to 360 degrees.

204 Acquire raw scan, $S_B(\lambda, \Theta)$, at each position, Θ , of the RAP (back reflectance).

206 Place non-polarizing reference sample on sample and adjust stage height to focus using the pattern recognition system.

208 Step RAP over a discrete set of angles from 0 to 360 degrees.

210 Acquire raw scan at each position, Θ , of the RAP from the reference sample, $S_o(\lambda, \Theta)$.

Fig. 2

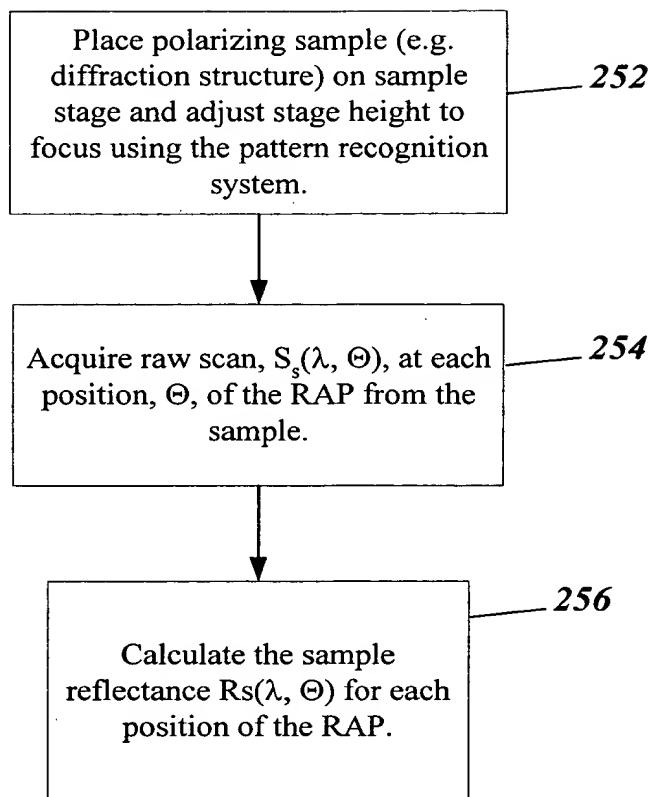


Fig. 3

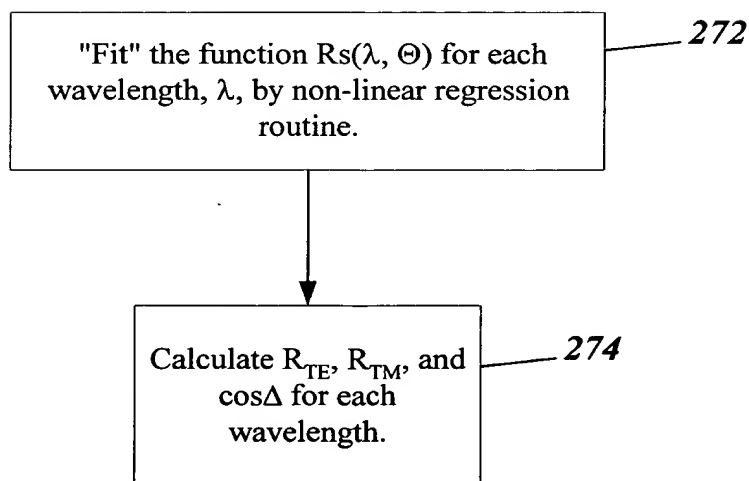


Fig. 4

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graph TD; 302[Acquire data from the grating structure on the sample under test.] --> 304[Calculate data with an optical model (RCWA) constructed to simulate the structure on the sample under test using variable parameters.]; 304 --> 306[Evaluate the match between the measured and calculated data.]; 306 --> 314{Is the match the best fit?}; 314 -- No --> 308[Adjust values of the variable parameters in the model.]; 308 --> 310[Recalculate data with the optical model (RCWA) using the adjusted parameter values.]; 310 --> 312[Reevaluate the match between the measured and calculated data.]; 312 --> 314; 314 -- Yes --> 316[Report parameters as measurement result.];
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302 Acquire data from the grating structure on the sample under test.

304 Calculate data with an optical model (RCWA) constructed to simulate the structure on the sample under test using variable parameters.

306 Evaluate the match between the measured and calculated data.

308 Adjust values of the variable parameters in the model.

310 Recalculate data with the optical model (RCWA) using the adjusted parameter values.

312 Reevaluate the match between the measured and calculated data.

314 Is the match the best fit?

316 Report parameters as measurement result.

Fig. 5